

6

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 08-077706  
 (43)Date of publication of application : 22.03.1996

(51)Int.CI.

G11B 20/10  
 H04H 1/00  
 H04K 1/04  
 H04N 5/92  
 H04N 5/93  
 H04N 7/167

(21)Application number : 07-191221

(71)Applicant : SONY CORP

(22)Date of filing : 04.07.1995

(72)Inventor : TSUKAMOTO JUNICHI  
 GOTO KOICHI  
 FUKUSHIMA SHINICHI

(30)Priority

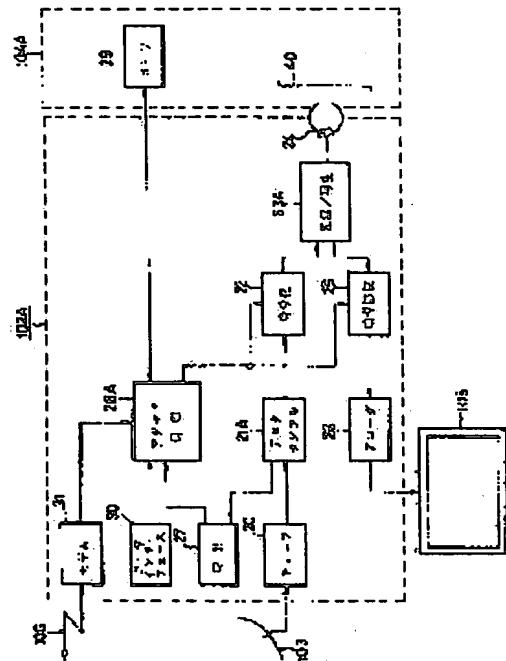
Priority number : 06180637 Priority date : 08.07.1994 Priority country : JP

## (54) RECORDING/REPRODUCING DEVICE

## (57)Abstract:

PURPOSE: To provide a recording/reproducing device for enabling reproduction only when specified conditions are satisfied in a case where video software is distributed via digital broadcasting or communication lines.

CONSTITUTION: A transmitted signal is ciphered by a ciphering circuit 22 and recorded. Reproducing conditions are transmitted and stored in a memory 29. When reproduction is to be performed, in accordance with the conditions stored in the memory 29, whether a code is deciphered or not by a code deciphering device 25 is controlled. Thus, reproduction is performed only when the specified conditions are met.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]  
[Patent number]  
[Date of registration]  
[Number of appeal against examiner's decision of rejection]  
[Date of requesting appeal against examiner's decision of rejection]  
[Date of extinction of right]

Copyright (C); 1998,2000 Japan Patent Office

\* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

**CLAIMS**

[Claim(s)]

[Claim 1] An encryption means to encipher an input signal, and the record medium, with which the above-mentioned input signal is recorded, According to the content of a regeneration condition storage means by which the regeneration conditions for being prepared corresponding to the above-mentioned record medium, and reproducing the above-mentioned record medium are recorded, a decryption means to decode the encryption to the regeneration information signal of the above-mentioned record medium, and the above-mentioned regeneration condition storage means it has a control means to control the above-mentioned decryption means, and the above-mentioned encryption means is enciphered according to regeneration conditions at the time of record, while it /carries out and \*\*\*\* is controlled the regeneration conditions which memorize the above-mentioned regeneration conditions for the above-mentioned regeneration condition storage means, and were memorized by the above-mentioned regeneration information storage means at the time of regeneration --- following --- the decryption of the above-mentioned decryption means --- the record regenerative apparatus which carried out, or carries out decryption and controlled \*\*\*\*

[Claim 2] A desk rumble means to scramble the input signal by which scramble was carried out, According to the content of a regeneration condition storage means by which the regeneration conditions for being prepared corresponding to the record medium with which the above-mentioned input signal is recorded, and the above-mentioned record medium, and reproducing the above-mentioned record medium are recorded, and the above-mentioned regeneration condition storage means it has a control means to control the above-mentioned desk rumble means, and a desk rumble is carried out with the above-mentioned desk rumble means according to regeneration conditions at the time of record, while it /carries out and \*\*\*\* is controlled The record regenerative apparatus which carries out a desk rumble with the above-mentioned desk rumble means according to the regeneration conditions which memorize the above-mentioned regeneration conditions for the above-mentioned regeneration condition storage means, and were memorized by the above-mentioned regeneration information storage means at the time of regeneration and which /Carries out and controlled \*\*\*\*.

[Claim 3] The above-mentioned regeneration condition storage means is a record regenerative apparatus according to claim 1 prepared in the memory of the cassette with memory.

[Claim 4] The above-mentioned regeneration condition storage means is a record regenerative apparatus according to claim 2 prepared in the memory of the cassette with memory.

[Claim 5] The above-mentioned regeneration condition storage means is a record regenerative apparatus according to claim 1 prepared in the sub-code area of a magnetic tape.

[Claim 6] The above-mentioned regeneration condition storage means is a record regenerative apparatus according to claim 2 prepared in the sub-code area of a magnetic tape.

[Translation done.]

\* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

**DETAILED DESCRIPTION**

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to protection of the operating profit or a copyright especially about the record regenerative apparatus which carries out record regeneration of the picture sent by the digital television broadcasting using the satellite.

[0002]

[Description of the Prior Art] Implementation of the digital television broadcasting which transmitted the compressed digital video signal is considered using the satellite. If the digital tele \*\*\*\*\* broadcast using such a satellite is realized, not only the television broadcasting that provides a target with a program on the other hand towards many televiewers from a mere broadcasting station but various interactive services will be attained. That is, many channelization can be attained in the digital television broadcasting using the satellite. For this reason, a specific televiewer is chosen and what says that a specific service is carried out only to a specific man can be performed. For example, an order of the specific video source sends the program of the video source towards the person for whom the video source was ordered. The video software sent by digital television broadcasting will be purchased using such a service, or a fixed term and a fixed number of times, and a thing which borrows will be performed briskly.

[0003]

[Problem(s) to be Solved by the Invention] Only when predetermined conditions are satisfied, it is necessary to enable it to reproduce, in order to realize such a service and to protect copyright protection and operating profit. That is, only when purchasing video software by the digital television broadcasting using the satellite and the conditions of "having paid the tariff" are satisfied, it is necessary to make regeneration possible. Moreover, only when a number of times is restricted, the video software sent by the digital television broadcasting using the satellite is reproduced and the conditions "the number of times of regeneration is less than a predetermined value" are satisfied, it is necessary to make regeneration possible. Only when a term is restricted, the video software sent by the digital television broadcasting using the satellite is rented and the conditions of "being during a loan term" are satisfied, it is necessary to make regeneration possible.

[0004] In addition, a system which transmits a digital video signal is considered using the digital circuit. Also in such a system, various interactive services are realizable like the digital television broadcasting using the satellite. Only when conditions are satisfied, it is necessary to enable it to reproduce similarly in the service using such a digital circuit, in order to protect copyright protection and operating profit.

[0005] Therefore, the purpose of this invention is to offer the record regenerative apparatus which can perform what makes regeneration possible, only when video software is distributed through a digital broadcast or a circuit and predetermined conditions are satisfied.

[0006]

[Means for Solving the Problem] An encryption means by which this invention enciphers an input signal, and the record medium, with which an input signal is recorded, According to the content of a regeneration condition storage means by which the regeneration conditions for being prepared corresponding to a record medium and reproducing a record medium are recorded, a decryption means to decode the encryption to the regeneration information signal of a record medium, and a regeneration

condition storage means the regeneration conditions which have a control means to control a decryption means and were memorized by the regeneration information storage means at the time of regeneration -- following -- the decryption of a decryption means -- it is the record regenerative apparatus which carried out, or carries out decryption and controlled \*\*\*\*

[0007] The transmitted signal is enciphered and recorded. And regeneration conditions are transmitted and this regeneration condition is memorized in regeneration condition storage memory. At the time of regeneration, according to the conditions memorized by this regeneration condition storage memory, an encryption is decoded and \*\*\*\* is controlled. What predetermined conditions are satisfied and makes regeneration possible by this only at a case can be performed.

[0008]

[Gestalt of operation]

a. The whole digital television broadcasting system block diagram 1 is an example of the digital-television \*\*\*\*\* broadcast system using the satellite which can apply this invention. In drawing 1, 101 is a broadcasting station and 102 is the digital signal receiver of each home. The digital signal receiver 102 is MPEG (Moving Picture Image Coding Experts Group) while the scramble given to the signal from the broadcasting station is canceled. Or the decoder which decodes MPEG 2, the modem for performing purchase and a rental of video software using a public line 106, and the video record / regenerative apparatus which performs record/regeneration of the sent video signal are included.

[0009] Digital VTR which compresses a digital video signal and is recorded on a magnetic tape, for example as the video record / a regenerative apparatus prepared in the digital signal receiver 102 is used. This digital VTR is equipped with the cassette 104 with memory (called Media Interface Connector). The access conditions which are referred to as full being [ "an access" ], "regeneration being impossible", "N times regeneration authorization", and "being regeneration authorization to term Y" are memorized by the memory of this cassette with memory 104 so that it may explain in full detail behind.

[0010] Moreover, the encryption circuit and the decryption circuit are established in the digital signal receiver 102. According to them, a video signal is not enciphered by the access conditions memorized by the memory of the cassette with memory 104, the magnetic tape of the cassette with memory 104 is resembled, or it is enciphered, and is recorded on it. Moreover, from the magnetic tape of the cassette with memory 104, the encryption of a regenerative signal is not decoded, but it is alike with this access condition, or it decodes, and is reproduced.

[0011] The monitor 105 is connected to the digital signal receiver 102. With the digital signal receiver 102, an input signal is decoded and this decoded signal is supplied to a monitor 105. Moreover, a video signal is reproduced from the magnetic tape of the cassette with memory 104, and a monitor 105 projects a regeneration picture image for this regenerative signal.

[0012] In such a system, video software is purchased as follows or it is rented, for example.

[0013] An order for video software with a broadcasting station 101 is placed by the user through the telephone line 106 to purchase or rent video \*\*\*\*\*. If an order for video software is placed, the video software will be chosen at a broadcasting station 101, and the signal of the video software will be transmitted from a broadcasting station 101.

[0014] As order gestalt of video software, there is the purchase of video software or a number-of-times limit of viewing and listening and a viewing-and-listening with-a-time-limit rental. A sending signal compresses for example, a digital video signal based on MPEG. This video signal may be sent by the real time, and time base compaction is carried out and it may be made to transmit it.

[0015] The signal from a broadcasting station 101 is received by the digital signal receiver 102 of each home through a satellite 107. The signal sent through this satellite 107 is decoded with the digital signal receiver 102. This video signal is recordable on the magnetic tape of the cassette with memory 104.

[0016] When video software is purchased, regeneration of the video signal which had supplied the tariff and was recorded on the magnetic tape of the cassette with memory 104 with \*\* and the digital signal receiver 102 is always attained. Only in the number of times the video signal recorded on the magnetic tape of the cassette with memory 104 was decided to be, regeneration becomes possible when video software is rented with the number-of-times limit of viewing and listening. When video software is rented with a viewing-and-listening term, it records on the magnetic tape of the cassette with memory 104, and regeneration becomes possible till the term when the video signal was decided.

[0017] Thus, it is necessary to purchase video software or to protect copyright protection and operating profit in a system which is rented by the number-of-times limit of viewing and listening, and viewing-and-listening with a time limit. Then, it can consider controlling record/regeneration according to the following conditions.

[0018] (1) If fixed conditions, for example, the conditions, finishing [ tariff delivery ], are fulfilled, record and regeneration of the broadcast program will be enabled by unconditionedness. If the tariff of software was prepaid when video software was purchased, it is the control for carrying out the record regeneration of the broadcast program freely.

[0019] (2) Although the broadcast program is once recorded, they are subsequent fixed conditions, for example, the conditions that the tariff was supplied to behind, and enables it to reproduce this recorded program. In case the tariff is paid after recording the broadcast program when it purchases or rents video software, it is the control for checking delivery of a tariff and performing the regeneration.

[0020] (3) Record the broadcast program and regeneration of the program is enabled only within a fixed number of times. When it rents video software with the number-of-times limit of viewing and listening, it is the control for being made to see to a predetermined usage count.

[0021] (4) Record the broadcast program and regeneration of the program is enabled only within a fixed term. When it rents video software by viewing-and-listening with a time limit, it is the control for being made to see till a predetermined term.

[0022] b. Example view 2 of a domestic receiving system shows an example of digital signal receiver 102A of each home. This digital signal receiver 102A is equipped with cassette 104A with memory. While the magnetic tape 40 is looped around, memory 29 is formed in cassette 104A with memory. Access conditions are memorized by this memory 29 so that it may explain later.

[0023] A modem 31 is formed in this digital signal receiver 102A. This modem 31 is formed in order to connect access-control circuit 28A to a public line 106. Access-control circuit 28A controls encryption processing and decryption processing, corresponding [ the order gestalt of video software, such as a rental with the purchase of video software, and the number-of-times limit of viewing and listening, and a viewing-and-listening term, and ] to whether the tariff is supplied or not. Moreover, access-control circuit 28A can perform read-out/writing of data to the memory 29 of cassette 104A with memory.

[0024] In drawing 2, the digital television signal sent from a broadcasting station 101 (drawing 1) through a satellite 107 (drawing 1) is received by the antenna 103. The digital television signal sent from a broadcasting station 101 through this satellite 107 is compressed considering MPEG as foundations. Moreover, the scramble of this digital television signal is carried out so that the reception only of the specific televiwer who contracted may be attained.

[0025] The input signal of an antenna 103 is supplied to the tuner circuit 20. The signal of a predetermined channel is chosen in the tuner circuit 20. The output of the tuner circuit 20 is supplied to descrambler 21A. The scramble of Digital Video Broadcasting is canceled by descrambler 21A.

[0026] In addition, the information which shows having paid the tariff, a rental term, and additional information, such as a number-of-times limit of a rental, may be included in the signal of Digital Video Broadcasting. This additional information is decoded by descrambler 21A. Furthermore, a time entry is included in an input signal. In order to update a clock 27, this time entry is supplied to a clock 27 from descrambler 21A.

[0027] The output of descrambler 21A is supplied to the encryption circuit 22. As for the encryption circuit 22, ON/OFF of encryption are controlled by access-control circuit 28A. When encryption is turned off, the video signal which it descrambled by descrambler 21A is supplied to record / regenerative-circuit 23A as it is. If encryption is turned on, it will be enciphered in the encryption circuit 22 and the video signal which it descrambled by descrambler 21A will be supplied to record / regenerative-circuit 23A.

[0028] The output of record regenerative-circuit 23A is supplied to a head 24. A digital video signal is recorded on a magnetic tape 40 by the head 24.

[0029] At the time of regeneration, the signal of a magnetic tape 40 is reproduced with a head 24. The output of a head 24 is supplied to record regenerative-circuit 23A. The output of record regenerative-circuit 23A is supplied to the decryption circuit 25.

[0030] As for the decryption circuit 25, ON/OFF of decryption are controlled by access-control circuit 28A. When decryption is turned off, the regenerative signal from record / regenerative-circuit 23A is

supplied to a decoder 26 as it is. If decryption is turned on, the decryption of the regenerative signal from record / regenerative-circuit 23A will be carried out in the decryption circuit 25, and it will be supplied to a decoder 26. A decoder 26 decodes MPEG. The output of a decoder 26 is supplied to a display 105.

[0031] c. An order of video software is performed by the user interface 30 about processing at the time of record using a public line 106. If it has paid the tariff in purchasing video software, while the sent video signal is recorded on a magnetic tape 40, without being enciphered, a "full access information" will be recorded on memory 29. In this case, since it is recorded, without being enciphered, it is always reproducible.

[0032] If it has paid the tariff in renting video software with the number-of-times limit of viewing and listening, while the sent video signal is enciphered in the encryption circuit 22, a "N times regeneration authorization information" will be recorded on memory 29. At the time of regeneration, the decryption only of the number of times of predetermined comes to be carried out by the "N times regeneration authorization information" on this memory 29.

[0033] If it has paid the tariff in renting video software by viewing-and-listening with a time limit, while the sent video signal is enciphered in the encryption circuit 22, "it is a regeneration authorization information to term Y" will be recorded on memory 29. At the time of regeneration, decryption comes to be carried out by "it being a regeneration authorization information to term Y" of this memory 29 till a term.

[0034] Such a control is explained in detail hereafter, referring to the flow chart of drawing 3.

[0035] An input is given to access-control circuit 28A by the user interface 30, when an user purchases video software, or it is with the number-of-times limit of viewing and listening or it rents by viewing-and-listening with a time limit. If an input is given to access-control circuit 28A by the user interface 30, access-control circuit 28A will be connected to a broadcasting station 101 through a modem 31 and the public line 106 (step S1).

[0036] The contract status will be investigated if access-control circuit 28A is connected to the broadcast music 101 (step S2). In not contracting, processing of an alarm, a disconnection of a circuit, etc. is performed (step S3).

[0037] When having contracted, it is with the number-of-times limit of viewing and listening about whether he wishes the purchase of video software, or it is investigated whether he wishes to rent by viewing-and-listening with a time limit (step S4). a \*\*\*\*\* [ that the tariff is paid in advance when to purchase is wished ] -- or it is investigated whether a tariff is paid immediately now (step S5)

[0038] When you wish to purchase, and the tariff is paid in advance or tariff delivery operation is performed, access-control circuit 28A writes a full access information in memory 29 while it sends the control signal which turns off the encryption circuit 22 to the encryption circuit 22. Since the encryption circuit 22 is turned off, the video signal by which scramble was carried out by descrambler 21A is recorded on a magnetic tape 40, without being enciphered (step S6).

[0039] When you wish to purchase, and a tariff is not paid in advance or tariff delivery operation is not performed, access-control circuit 28A writes a "regeneration improper information" in memory 29 while it sends the control signal which turns on the encryption circuit 22 to the encryption circuit 22. Since the encryption circuit 22 is turned on, it is enciphered and the video signal which it descrambled by descrambler 21A is recorded on a magnetic tape 40 (step S7).

[0040] By step S4, when the purchase of video software is not wished, it is investigated whether he wishes to rent with the number-of-times limit of viewing and listening (step S8). a \*\*\*\*\* [ that the tariff is paid in advance when to rent is wished with the number-of-times limit of viewing and listening ] -- or it is investigated whether a tariff is paid immediately now (\*\*\*\*\* S9)

[0041] When you wish to rent with the number-of-times limit of viewing and listening, and the tariff is paid in advance or tariff delivery operation is performed, access-control circuit 28A writes a "N times regeneration authorization information" in memory 29 while it sends the control signal which turns on encryption to the encryption circuit 22. Since the encryption circuit 22 is turned on, it is enciphered and the video signal which it descrambled by descrambler 21A is recorded on a magnetic tape 40 (step S10).

[0042] When you wish to rent with the number-of-times limit of viewing and listening, and a tariff is not paid in advance or tariff delivery operation is not performed, access-control circuit 28A writes a

"regeneration improper information" in memory 29 while it sends the control signal which turns on an encryption circuit to the encryption circuit circuit 22. Since the encryption circuit 22 is turned on, it is enciphered and the video signal which it descrambled is recorded on a magnetic tape 40 (step S7).

[0043] When the rental with the number-of-times limit of viewing and listening is not wished at step S8, it is investigated whether he wishes the rental with a viewing-and-listening term limit (step S11). a \*\*\*\*\* [ that the tariff is paid in advance when the viewing-and-listening with-a-time-limit rental is wished ] --- or it is investigated whether a tariff is paid immediately now (step S12)

[0044] When you wish to rent with the number-of-times limit of viewing and listening, and the tariff is paid in advance or tariff delivery operation is performed, access-control circuit 28A writes "it is a regeneration authorization information to term Y (year:month:day)" in memory 29 while it sends the control signal which turns off encryption to the encryption circuit 22. Since the encryption circuit 22 is turned on, it is enciphered and the video signal which it descrambled by descrambler 21A is recorded on a magnetic tape 40.

[0045] When a tariff is not paid in advance or tariff delivery operation is not performed, it goes to step S7, and access-control circuit 28A writes a "regeneration improper information" in memory 29 while it sends the control signal which turns on encryption to the encryption circuit 22. Since the encryption circuit 22 is turned on, it is enciphered and the video signal which it descrambled by descrambler 21A is recorded on a magnetic tape 40.

[0046] As mentioned above, while it will be recorded, without enciphering a video signal if a tariff is supplied when video software is purchased, a "full access information" is written in memory 29. While a video signal will be enciphered and recorded if the tariff is not supplied when video software is purchased, a regeneration improper information is recorded on memory 29.

[0047] If video software is rented with the number-of-times limit of viewing and listening and a tariff is supplied to a case, while a video signal will be enciphered and recorded, a "N times regeneration authorization information" is written in memory 29. While a video signal will be enciphered and recorded if a tariff is supplied when video software is rented by viewing-and-listening with a time limit, "it is a regeneration authorization information to term Y" is written in memory 29. While a video signal will be enciphered and recorded if the tariff is not supplied when video software is rented by the number-of-times limit of viewing and listening, and viewing-and-listening with a time limit, a "regeneration improper information" is recorded on memory 29.

[0048] d. Explain processing at the time of regeneration, next processing at the time of regeneration with reference to the flow chart of drawing 4.

[0049] First, the case where the video software which paid and purchased the tariff is reproduced is explained. As mentioned above, while it is recorded, without enciphering a video signal if the tariff is supplied when video software is purchased, the full access information is written in memory 29 (step S6 reference). When reproducing the signal currently recorded on the magnetic tape 40, record, now the information which is read to memory 29 (step 21). If video software is purchased and the tariff is supplied, a "full access information" will be acquired at this time.

[0050] It is investigated whether the information from this memory 29 is a "regeneration improper information" (step S22), and if it is not a "regeneration improper information" It is investigated whether it is a "N times regeneration authorization information" (step S23), and if it is not a "N times regeneration authorization information" "Whether it is a regeneration authorization information to term Y" is investigated (step S24), and if it "is not a regeneration authorization information to" term Y It is investigated whether it is "a reproducible information" (step S25), and if it is not "a reproducible information", it will be investigated whether it is a "full access information" (step S26).

[0051] If video software is purchased and the tariff is already paid, it will be judged at step S26 that it is a "full access information." If it turns out that it is a "full access information", a video signal will be reproduced as it is (step S27). Since the video signal currently recorded on the magnetic tape 40 is not enciphered if the tariff is supplied when video software is purchased, the signal from a magnetic tape 40 is decryption needlessness.

[0052] The information from memory 29 In not being what \*\* of a "regeneration improper information", a "N times regeneration authorization information", "it being a regeneration authorization information to term Y", "a reproducible information", and a "full access information", either, access-control circuit 28A sends the control signal which turns off decryption to the decryption circuit 25, and becomes

impossible [ regeneration ]. (Step S28).

[0053] Next, a tariff is paid and the case where video software is rented by viewing-and-listening with a time limit is explained. When a tariff is paid and video software is rented by viewing-and-listening with a time limit, while the video signal is enciphered and recorded on the magnetic tape 40, "it is a regeneration authorization information to term Y" is written in memory 29 (step S13 reference). It is investigated whether the information from this memory 29 is a "regeneration improper information" (step S22), if it is not a "regeneration improper information", it will be investigated whether it is a "N times regeneration authorization information" (step S23), and if it is not a "N times regeneration authorization information", "whether it is a regeneration authorization information to term Y" will be investigated (step S24). When a tariff is paid and video software is rented by viewing-and-listening with a time limit, the information from memory 29 becomes "being a regeneration authorization information to term Y."

[0054] If video software is rented by viewing-and-listening with a time limit and the tariff is already paid, "The information from memory 29 is a regeneration authorization information to term Y" will be judged at step S24. If it turns out "that it is a regeneration authorization information to term Y", this term Y will be compared with the present year, the month, and a day, and it will be judged whether term Y has passed (step S29).

[0055] If the term has passed, access-control circuit 28A will send the control signal which turns off decryption to the decryption circuit 25, and will become impossible [ regeneration ] (step S28).

[0056] If it is within a term, access-control circuit 28A sends the control signal which turns on decryption to the decryption circuit 25. For this reason, the enciphered video signal which is recorded on the magnetic tape 40 is decoded and reproduced (step S30).

[0057] Next, a tariff is paid and the case where video software is rented with the number-of-times limit of viewing and listening is explained. When a tariff is paid and video software is rented with the number-of-times limit of viewing and listening, while the video signal is enciphered and recorded on the magnetic tape 40, the "N times regeneration authorization information" is written in memory 29 (step S10 reference). It is investigated whether the information from memory 29 is a "regeneration improper information" (step S22), and if it is not a "regeneration improper information", it will be investigated whether it is a "N times regeneration authorization information" (step S23). When a tariff is paid and video software is rented by number-of-times [ of viewing and listening ] with a time limit, the information from memory 29 turns into a "N times regeneration authorization information."

[0058] If video software is rented with the number-of-times limit of viewing and listening and the tariff is already paid, it will be judged at step S23 that the information from memory 29 is a "N times regeneration authorization information." If it is judged that it is a "N times regeneration authorization information", it will be judged whether N regeneration is completed (step S31).

[0059] If N regeneration is completed, access-control circuit 28A will send the control signal which turns off decryption to the decryption circuit 25, and will become impossible [ regeneration ] (step S28).

[0060] If N regeneration is not completed, the regeneration improper information already memorized by memory 29 is rewritten by "N-1 time regeneration authorization information" (step S32). And access-control circuit 28A sends the control signal which turns on decryption to the decryption circuit 25. For this reason, the enciphered video signal which is recorded on the magnetic tape 40 is decoded and reproduced (step S30).

[0061] Next, the case where the tariff is not paid at the time of purchase is explained. While the video signal is enciphered and recorded as mentioned above if a tariff is not paid at the time of purchase, the "regeneration improper information" is recorded on memory 29 (step S7 reference). In this case, a tariff is supplied at the time of regeneration, and video software can be purchased or it can rent by number-of-times with a time limit or with a time limit.

[0062] First, a tariff is paid at the time of regeneration and the case where video software is purchased is explained.

[0063] When the information from memory 29 is a "regeneration improper information", access-control circuit 28A is connected to the broadcast music 101 (step S33). Here, in video software, if it is purchase hope, a purchase tariff is paid. If it is investigated whether the purchase tariff of video software was paid (step S34) and a purchase tariff is paid, the "regeneration improper information" already memorized by memory 29 will be rewritten by "the reproducible information" (step S35).

[0064] Thus, if the tariff for the purchase of video software is paid, a "regeneration authorization information" will be recorded on memory 29. If "a reproducible information" is recorded on memory 29, access-control circuit 28A will send the control signal for decryption to the encryption circuit 25. For this reason, the enciphered video signal which was recorded on the magnetic tape 40 and to cut is decoded and reproduced (step S30).

[0065] In addition, if "a reproducible information" is written in memory 29, at the time of future regeneration, it will be judged at step S25 that the information on memory 29 is "a reproducible information", and the video signal which goes to step 30 and was enciphered from the magnetic tape 25 will come to be decoded and reproduced henceforth.

[0066] Next, a tariff is paid at the time of regeneration and the case where video software is rented with the number-of-times limit of viewing and listening is explained.

[0067] When the information from memory 29 is a "regeneration improper information", access-control circuit 28A is connected to the broadcast music 101 (step S33). Here, in video software, if it is rental hope with the number-of-times limit of viewing and listening, a reproduced rental tariff is paid N times. If it is investigated whether the purchase tariff of video software was paid (step S34) and the purchase tariff is not paid, it is investigated whether it rents with the number-of-times limit of viewing and listening (step S36). When it rents with the number-of-times limit of viewing and listening, the audience fee gold of N batch is paid.

[0068] It is investigated whether the audience fee gold of N batch was paid, and if the audience fee gold of N batch is paid, the "regeneration improper information" already memorized by memory 29 will be rewritten by "N-1 time regeneration authorization information" here (step S32). And access-control circuit 28A sends the control signal which turns on decryption to the decryption circuit 25. For this reason, the enciphered video signal which is recorded on the magnetic tape 40 is decoded and reproduced (step S30).

[0069] Next, a tariff is paid at the time of regeneration and the case where video software is rented by viewing-and-listening with a time limit is explained.

[0070] When the information from memory 29 is a regeneration improper information, access-control circuit 28A is connected to the broadcast music 101 (step S33). Here, in video software, if it is rental hope in viewing-and-listening with a time limit, a rental tariff is paid. If it is investigated whether it rents with the number-of-times limit of viewing and listening if it is investigated whether the purchase tariff of video software was paid (step S34) and the tariff is not paid (step S36) and the audience fee gold of N batch is not paid, it is investigated whether the rental tariff to term Y was paid (step S37).

[0071] If the rental tariff to term Y is paid, the "regeneration improper information" already memorized by memory 29 will be rewritten by "the reproducible information to term Y" (step S38). And access-control circuit 28A sends the control signal which turns on decryption to the decryption circuit 25. For this reason, the enciphered video signal which is recorded on the magnetic tape 40 is decoded and reproduced (step S30).

[0072] g. In the above-mentioned example which is a modification, although access conditions were memorized in the memory 29 of cassette 104A with memory using cassette 104A with memory, the memory of access conditions is not limited to the memory 29 of cassette 104A with memory. As shown in drawing 5, you may be made to use for example, the sub-code area of the magnetic tape 40 of cassette 104B as memory which memorizes access conditions.

[0073] moreover, which forms the encryption circuit 22 and the decryption circuit 25, and carries out encryption and decryption in the above-mentioned example -- instead of using such an encryption, although the access control is more carried out for not carrying out, as shown in drawing 6, an operation of descrambler 21C is controlled by access-control circuit 28C, and a desk rumble is solved - - you may be made to control an access without / solving

[0074] Furthermore, as shown in drawing 7, while for example, the sub-code area of the magnetic tape 40 of cassette 104C is used as memory which memorizes access conditions, an operation of descrambler 21C is controlled by access-control circuit 28C, and it drops off in / solution which solves a desk rumble, and may be made to control an access.

[0075] Moreover, in an above-mentioned example, although the information from a broadcasting station is sent through the circuit, you may be made to send these informations as additional information of television broadcasting. Moreover, you may be made to send the key of encryption with an information.

[0076] Moreover, an user may place an order for direct video software using a telephone, and for the additional information over it to be inputted into answerback \*\*\*\*\*\*, although it enables it for a broadcasting station and the receiving system terminal of each home to perform data communication and it is made to send an order and additional information of video software by data in the above-mentioned example using a public line, and it may be made to input the additional information into each receiving system.

[0077] Moreover, this invention is applicable similarly in a system which performs a transmission of a video signal, and a transmission of data using a circuit.

[0078]

[Effect of the Invention] According to this invention, it is enciphered by the conditions of contract, the transmitted signal is recorded, regeneration conditions are transmitted, and this regeneration condition is memorized by memory. It is controlled although an encryption is not decoded according to the conditions memorized by this memory at the time of regeneration. What a predetermined conditions of contract is satisfied and makes regeneration possible by this only at a case can be performed.

---

[Translation done.]

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

## DESCRIPTION OF DRAWINGS

---

[Brief Description of the Drawings]

[Drawing 1] It is the perspective diagram showing the schema of the digital television system using the satellite which can apply this invention.

[Drawing 2] It is the block diagram used for an explanation of one example of this invention.

[Drawing 3] It is the flow chart used for an explanation of one example of this invention.

[Drawing 4] It is the flow chart used for an explanation of one example of this invention.

[Drawing 5] It is the block diagram used for an explanation of other examples of this invention.

[Drawing 6] It is the block diagram used for an explanation of other examples of this invention.

[Drawing 7] It is the block diagram used for an explanation of other examples of this invention.

[Description of Notations]

22 Encryption Circuit

25 Decryption Circuit

---

[Translation done.]